models are then used for computing the required changes in the set values of control signals given to each one of the selected dryers. After computation, the new set values are transmitted to the unit controllers that implement the changes in the set values.

IN THE CLAIMS:

Cancel claims 1 to 13, without prejudice.

Add the following new claims:

14. A method for controlling a drying effect of an equipment layout used in making a coated web of paper or board, the equipment layout comprising at least one coater unit and at least one drying unit, the method comprising:

applying a liquid-containing coating furnish to a surface of a web;

drying the web coated with the coating furnish in the at least one drying unit by evaporating the liquid from the coated web until a moisture content of the web reaches a desired final moisture value;

compiling, for each drying unit wherein moisture is evaporated from the web, an evaporation rate submodel suited for computing an amount of liquid removed by the respective drying unit, wherein at least one specific evaporation rate submodel is linked into a composite evaporation rate model;

determining a needed overall evaporation effect to be performed by the equipment layout to achieve the desired final moisture value;

determining, by employing the composite evaporation rate model, a needed moisture evaporation effect for each drying unit of the equipment layout to achieve the needed overall evaporation effect; and

controlling the moisture evaporation rate for each drying unit of the equipment layout in accordance with the determined needed moisture evaporation effect.

15. The method according to claim 14, further comprising:

controlling an evaporation effect of one drying unit of the equipment layout with the composite evaporation rate model; and

setting the evaporation effect of every other drying unit of the equipment layout to a fixed value.

16. The method according to claim 14, further comprising:

controlling an evaporation effect of at least two drying units of the equipment layout with the composite evaporation rate model.

17. The method according to claim 14, further comprising:

measuring a final moisture content of the web attained after drying the web with the at least one drying unit;

comparing the measured final moisture content with the desired final moisture value; and

controlling the moisture evaporation rate for at least one drying unit of the equipment layout with the composite evaporation rate model.

18. The method according to claim 17, further comprising:

measuring the web moisture at at least one point upstream of where the final moisture content is measured to determine at least one intermediate moisture content value; and

controlling, by employing the measured intermediate moisture content value, the moisture evaporation rate for at least one controllable drying unit of the equipment layout upstream of where the intermediate moisture content is measured.

19. The method according to claim 14, further comprising:

measuring an initial moisture content of the web prior to entering a first of the at least one coater unit;

determining the amount of liquid applied to the web in said applying step; and

controlling, using the composite evaporation rate model, the measured initial moisture content, and the determined amount of liquid applied to the web, an evaporation rate of at least one controllable drying unit of the equipment layout.

20. The method according to claim 15, further comprising:

varying operating parameters of the controlled drying unit of the equipment layout;

measuring a web moisture value downstream of the drying unit for which the evaporation rate is controlled;

comparing the measured web moisture value to a web moisture value determined by employing the composite evaporation rate model; and

adjusting the evaporation effect of the drying unit for which the evaporation rate is controlled so as to result in a measured web moisture value substantially the same as the web moisture value determined by employing the composite evaporation rate model.

21. The method according to claim 20, wherein a control signal to the controlled drying unit is changed in at least one of a stepwise manner and a superimposition of a pseudo-random binary signal (PRBS) on at least one set value.

22. The method according to claim 14, wherein an output value obtained from the evaporation rate submodel of a drying unit of the equipment layout is used as an input value in the evaporation rate submodel of a next successive drying unit of the equipment layout.

23. The method according to claim 17, wherein any needed change in the overall moisture evaporation effect is allocated among drying units for which the evaporation rate is controlled using the composite evaporation rate model proportionately in ratios determined by predetermined weighting factors.

24. The method according to claim 14, wherein an output value obtained from the evaporation rate submodel of a unit of the equipment layout is used as input value in the evaporation rate submodel of a preceding unit of the equipment layout.

25. The method according to claim 14, wherein the equipment layout comprises a plurality of subsystems, each subsystem comprising at least one coater unit and at least one dryer unit, and wherein an output value obtained from the evaporation rate submodel of a subsystem is used as input value in the evaporation rate submodel of a preceding subsystem.

26. The method according to claim 14, wherein the equipment layout comprises a plurality of subsystems, each subsystem comprising at least one coater unit and at least one dryer unit, and each subsystem having a respective evaporation rate submodel, and wherein the subsystem evaporation rate submodels interact to produce the needed overall moisture effect of the equipment layout.